

GVEA Solar Project



The Process

The Options

The Recommendation





Why consider a Solar Project at GVEA?

The simple answer is

“member interest”



The Process

- Chairman Bill Nordmark proposes the Solar Committee- September 2015
- Committee charged with bringing a recommendation to the full board
- 3 board members
- 2 Member Advisory Committee (MAC)
- 4 staff
- First Step was to consider the options for solar

Options

4 Models Considered



1. Distributed Generation at Member Sites
 - Member Owned
 - Member Leased
2. Purchased Power
 - With Subscription
 - Full Membership
3. Cooperative Ownership
 - With Subscription
 - Full Membership
4. Community Solar
 - Cooperative Sponsored
 - Third Party Sponsored

Benefits & Challenges of each Model



1. Distributed Generation at Member Sites (aka net metering)

Member Owned - “rooftop solar”

Benefits

- 30% Investment Tax Credit (ITC)

- Member does it all

- High retail rates

Challenges

- limited to initiative of the members

- Co-Op can be viewed as passive or disengaged

- RCA mandated for 5 electric utilities in Alaska

Benefits & Challenges of each Model



1. Distributed Generation at Member Sites (aka net metering)

Member Leased (Third Party – e.g. Solar City) - “rooftop solar”

Benefits

- No upfront cost to member

- Third party may offer more competitive rates due to ITC efficiency

Challenges

- Co-Op involvement may be necessary and members will look to the Co-Op for issues with interconnection or billing

Benefits & Challenges of each Model



2. Purchased Power – e.g. ACME Solar Company

With Subscription = green pricing

Benefits

- Members interested in solar alone receive the power
- No upfront costs to the Co-Op
- No project risk to the Co-Op

Challenges

- Burden of enforcing subscriptions
- No control of siting
- ITC accrues to supplier and members may not receive tax benefits

Benefits & Challenges of each Model



2. Purchased Power - e.g. ACME Solar Company

Full Membership

Benefits

- No upfront costs to the Co-Op

- No project risk to the Co-Op

Challenges

- Project can be sized to meet member interest

- Rate design and administration is simple

- No upfront to the Co-Op or its members

Benefits & Challenges of each Model



3. Cooperative Ownership

With Subscription - voluntary

Benefits

- Solar plant size can be sized to meet member demand
- Co-Op has control of siting to maximize visibility
- Co-Op can get the most efficient financing

Challenges

- Non profit status makes monetizing ITC tricky (flip structure)
- Co-Op assumes all project risk
- Administering subscriptions, long durations, & changing subscriptions



Benefits & Challenges of each Model

3. Cooperative Ownership

Full Membership - not voluntary

Benefits

- Rate design and administration is simple
- Solar plant size can be sized to Co-Op goals and mandates
- Co-Op has control of siting to maximize visibility
- Co-Op can get the most efficient financing
- Co-Op can choose the form of organization to monetize the ITC (or not)

Challenges

- Non profit status makes monetizing ITC tricky (flip structure)
- Co-Op assumes all project risk
- * Upward pressure on rates for those that don't want solar

Benefits & Challenges of each Model



4. Community Solar

Cooperative Sponsored

Benefits

- Co-Op has control over the project
- Solar plant size can be sized to meet member demand
- Co-Op has control of siting to maximize visibility
- Co-Op can get the most efficient financing
- Co-Op can choose the form of organization to monetize the ITC

Challenges

- Non profit status makes monetizing ITC tricky (flip structure)
- Members have to bear upfront costs unless the Co-Op offers “on-bill” financing
- Co-Op tax-exempt status requires innovative approaches (flip)



Benefits & Challenges of each Model

4. Community Solar

Third Party Sponsored – e.g. Clean Energy Collective

Benefits

For profit third party may be able to harvest ITC benefit more efficiently

Little involvement by the Co-Op

Challenges

Third Party involvement could strain Co-Op engagement with members

Members have to bear upfront costs unless the Co-op offers “on-bill” financing

Co-Op tax-exempt status requires innovative approaches (flip)

Co-Op involvement may be necessary and members will look to Co-Op to issues with interconnection or billing

Typical Third Party Community Solar (Clean Energy Collective)



- CEC Purchases land (or uses/leases GVEA land)
- CEC Builds and owns infrastructure
- CEC Maintains Infrastructure
- CEC markets and sells shares to members
- CEC connects into GVEA Distribution System-small load no need for regulation
- Claim they can be up and running in 5-6 months once PPA is signed.
- GVEA members who purchase shares may be eligible for 30% Income tax credit.
- Virtual Net Metering = Spin the members bill back not the meter



What was the recommendation
by GVEA Solar Committee?

What is best for the members?



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GVEA Solar Plant



Plant Size	563 kw
Panel size	320 watts
Number of panels	1,760
Est. Annual Production (kWh)	594,531
Proposed Cost	\$ 1,006,719.00



Solar Plant Location Brown Field





Installed \$/Watt	\$1.79	
Proposal Defined Capacity Factor (%)		12.05%
Installed \$/kWh*	\$1.69	
\$/kWh**	\$0.068	
\$/kWh ***	\$0.136	
\$/kWh ****	\$0.136	
\$/kWh *****	\$0.144	

Assumed Annual O&M Costs	\$22,500.00
GVEA Interconnect Costs	\$100,000.00
REAP Grant Contribution	\$225,173.00

* Installed Cost/kWh (neglecting project life expectancy)

** Assuming 25 year project life

*** Assuming 25 year project life with all systems at capacity factor of 6%

**** Capacity Factor Adjusted to 6% for all systems, add O&M costs for one year

***** Capacity Factor Adjusted to 8% for all systems, added contractor provided O&M costs for one year, assumed estimated O&M (EPRI) for project life (25 years), applied REAP Grant credit, added estimated GVEA interconnect costs



Summary

- Cooperative Owned- Full Membership
- REAP **Grant** for \$225,000
- Will not harvest ITC
- RFP was made public
- Received 4 responses to RFP
- Built on existing property behind the BESS
- Visible from Van Horn Road (2.5 Acre footprint)
- GVEA Board **Approves** the Committee Recommendation
- Anticipating EPC contract
- Financials and performance metric coming soon
- **Largest** Solar Array in Alaska